REMARKS

This is in response to the <u>Office Action</u> mailed December 19, 2005. In the <u>Office Action</u>, Applicant's Claims 2-20, 17, 23 and 26 were allowed. Applicant gratefully acknowledges the allowance of these claims.

The <u>Office Action</u> included the following rejections:

i.   Applicant's Claims 19, 20 and 27-29 were rejected as anticipated by U.S. Pat. No. 5,968,109 ("Israni");

ii.   Applicant's Claim 24 was rejected as obvious over the combination of U.S. Pat. No. 6,282,489 ("Bellesfield") and U.S. Pat. No. 5,754,846 ("Janse");

iii. Applicant's Claim 25 was rejected as obvious over the combination of Janse, U.S. Pat. No. 5,694,534 ("White, Jr.") and Bellesfield; and

iv.   Applicant's Claims 13-15 were rejected as obvious over the combination of Janse, White, Jr., Bellesfield, and Israni.

With this response, Applicant addresses each of these rejections and requests reconsideration of the present application. Applicant submits that the present application is now in condition for allowance.

I.   Applicant's Claims 19, 20 and 27-29.

In the <u>Office Action</u> mailed December 19, 2005, Applicant's independent Claims 27 and 29 and dependent Claims 19, 20 and 28 were rejected as anticipated by U.S. Pat. No. 5,968,109 ("Israni"). This rejection is addressed as follows:

Claim 27

Applicant has cancelled independent Claim 27.[1]

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[1] The amendment and cancellation of claims in the present response is intended to be without prejudice, to the extent permissible by law. Applicant reserves the right to present any of these claims without the amendments in the present response in a continuation application or another application where the patentability of these claims to Applicant can be established.

Claim 29

Applicant has amended independent Claim 29 to clarify the features recited therein. Applicant's Claim 29 distinguishes Israni, at least for the following reasons.

Israni discloses a geographic database organized into parcels.[2] Some of the parcels in the Israni database include an internal kd-tree index for performing spatial searches of the data contained in the parcel (Israni: column 43, line 35-colulmn 44, line 24). According to these passages from Israni, the geographic area associated with a cartographic parcel is divided into "cells." When the cartographic parcel is formed, the data entities are grouped by cell, i.e., all the data entities that represent geographic features located within a cell are physically grouped together within the parcel on the medium, separate from the data entities that represent geographic features located within each of the other cells. The internal kd-tree index associated with each cartographic parcel identifies the geographic boundaries of these cells. The internal kd-tree index also identifies where the data entities that represent geographic features located within each cell can be located by identifying the first data entity in each cell and the count of subsequent data entities within the parcel that represent geographic features located within that cell (Israni: FIG. 11B). The arrangement disclosed by these passages from Israni requires that each cell have its own, separate data records for any geographic features located within the cell. As a result, a geographic feature that spans several cells, as shown in FIG. 11C of Israni, is divided up into smaller features (labeled PG11-PG16 in FIG. 11C of Israni). Then, a separate data record is formed for each of the smaller features, each of the separate data records is grouped with other data records that represent features located in their respective cells and then the records for each cell are stored contiguously together within the parcel.

The database organization disclosed in these passages from the Israni patent addresses the concerns associated with accessing particular data records within a parcel. Applicant's Claim 29 describes a database structure that is different from the database

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[2] The Israni patent is assigned to the assignee of the present application. To the extent permitted by law, any statements in the present response regarding the disclosure of the Israni patent should not be used to restrict the scopes of claims in the Israni patent.

structure disclosed in Israni. In the database recited in Applicant's independent Claim 29, the geographic area associated with a parcel is divided into a plurality of sub-areas, similar to the "cells" disclosed by Israni. However, unlike the database in Israni, the data entities contained within each parcel in the database described by Applicant's Claim 29 can represent features that are _not limited_ to being located within only one sub-area. Instead, in the database of Applicant's Claim 29, a data entity may represent a geographic feature located in several sub-areas associated with a parcel.

The database of Applicant's Claim 29 can provide this advantage because it includes an internal spatial index structure that is different from the type of internal spatial index disclosed by Israni. According to Applicant's Claim 29, two indexes are associated with each parcel. Each *"first index defines a plurality of sub-areas formed of the area associated with the parcel"* and each *"second index associates each of the data records in the parcel . . . to at least one of the plurality of sub-areas defined by the first index."* An advantage provided by the *"data structure"* of Applicant's Claim 29 is that in the case where a geographic feature represented by a single data entity is located in (i.e., *"intersects"*) more than one of the rectangular sub-areas formed of the area associated with a parcel, the *"second index"* identifies the single data entity. Thus, with the *"data structure"* of Applicant's Claim 29, the need to divide up a geographic feature into smaller features, as illustrated in FIG. 11C of Israni, is obviated.

For the above reasons, Applicant's independent Claim 29 is not anticipated by Israni.

Claims 19, 20 and 28.

Applicant's Claims 19, 20 and 28 are dependent claims. Applicant has amended Claims 19 and 28 to make them depend from allowed independent Claim 26. Applicant has amended Claim 20 to make it depend from independent Claim 29, which is allowable for the reasons explained above.

II. Applicant's Claim 24.

In the Office Action mailed December 19, 2005, Applicant's Claim 24 was rejected as obvious over the combination of Bellesfield and Janse. Applicant has amended independent Claim 24 is clarify the subject matter recited therein. Specifically, Applicant's independent Claim 24 recites:

"in the case that the search area intersects more than one of said plurality of rectangular sub-areas and a geographic feature represented by a single data entity intersects each of said more than one of said plurality of rectangular sub-areas, the second index identifies said single data entity."

Bellesfield and Janse, even if combined, do not disclose the features recited in Applicant's independent Claim 24. Specifically, Bellesfield and Janse do not disclose the *"first index"* and the *"second index"* associated with a *"parcel of data"* that contains *"data entities that represent geographic features encompassed within a first rectangular area located within the geographic region"* wherein the *"first index"* is used to identify the *"rectangular sub-areas"* into which the *"first rectangular area is divided"* and the *"second index"* is used to identify the *"data entities"* that represent the geographic features that intersect each of the *"sub-areas" "such that in the case that the search area intersects more than one of said plurality of rectangular sub-areas and a geographic feature represented by a single data entity intersects each of said more than one of said plurality of rectangular sub-areas, the second index identifies said single data entity."*

Accordingly, at least for this reason, Applicant's independent Claim 24 is not obvious over the combination of Bellesfield and Janse.

III. Applicant's Claim 25

In the Office Action mailed December 19, 2005, Applicant's independent Claim 25 was rejected as obvious over the combination of Janse, White, Jr. and Bellesfield. Applicant has amended independent Claim 25 to clarify the subject matter recited therein. Specifically, Applicant's Claim 25 recites:

"in the case that the search area intersects more than one of said plurality of rectangular sub-areas and a geographic feature represented by a single data entity

intersects each of said more than one of said plurality of rectangular sub-areas, the second index identifies said single data entity."

Janse, White, Jr. and Bellesfield, even if combined, do not disclose the computer-implemented method recited in Applicant's independent Claim 25. Specifically, these references do not disclose the steps of:

"using a first index associated with" a *"parcel"* of data in a geographic database to identify *"each rectangular sub-area formed of the rectangular area associated with the parcel that intersects"* a *"search area"* and

"using a second index associated with the parcel to identify each of the data entities contained therein that represents a geographic feature that intersects each of the sub-areas identified in" the prior step.

Further, Janse, White, Jr. and Bellesfield, even if combined, do not disclose that *"in the case that the search area intersects more than one of said plurality of rectangular sub-areas and a geographic feature represented by a single data entity intersects each of said more than one of said plurality of rectangular sub-areas, the second index identifies said single data entity."*

Accordingly, at least for these reasons, Applicant's independent Claim 25 is not obvious over the combination of Janse, White, Jr., and Bellesfield.
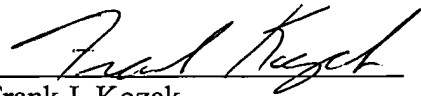
IV.   Claims 13-15

Applicant's Claims 13-15 were rejected as obvious over the combination of Janse, White, Jr., Bellesfield, and Israni. Applicant's Claims 13-15 are dependent claims that depend from independent base Claim 25. Applicant's independent Claim 25 is not obvious over these references for the reasons explained above. Accordingly, Applicant's dependent Claims 13-15 are allowable at least for the same reasons. Furthermore, Applicant's dependent Claims 13-15 include additional limitations that are neither disclosed nor suggested by these references, taken alone or in proper combination.

V.   <u>Conclusion</u>

Applicant submits that the present application is in condition for allowance. If any issues remain, the Examiner is invited to call the undersigned.

Respectfully submitted,

Frank J. Kozak
Reg. No. 32,908
Chief Intellectual Property Counsel

NAVTEQ North America, LLC
(formerly NAVIGATION TECHNOLOGIES CORPORATION)
222 Merchandise Mart Plaza, Suite 900
Chicago, Illinois 60654
(312) 894-7000 x7371